

Contact Information

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DEPARTMENT OF
COMMERCE

AGENDA

REVIEW

- Implementation Schedule
- NCDOT Methodology
- NCDOT Needs and Benefits Criteria

NEW INFORMATION

- Economic Development Methodology & Components
- Describe Economic Development Details (Handout)
- Respond to Questions/Comments/Concerns from Previous Webinar

ADDITIONAL QUESTIONS

REVIEW

Urban Loop Pilot Prioritization Process (DRAFT)

◎ *Implementation Schedule*

- **January 27th** – Workshop/Webinar
- **February 26th** – Second 60 day comment period ends
- **March** – Review comments and revise criteria if necessary
- **March/April** – Work with MPO staffs to review inputs to scoring system
- **May/June** – Present to BOT and publish results

Urban Loop Pilot Prioritization Process (DRAFT)

◎ Methodology

- Benefit Cost – type Approach
- Needs Factors – What are the deficiencies (Congestion/Safety)?
- Benefit Factors- What are the benefits gained?
- Costs- Capital Expenditures remaining to complete the Loop Program

Urban Loop Pilot Prioritization Process (DRAFT)

| <i>Need Factors</i> | <i>Benefit Factors</i> |
|---------------------|-----------------------------|
| Congestion Needs | Travel Time Savings |
| Safety Needs | Non-Loop Funding |
| | Economic Development |
| | Multi-Modal |
| | Freight Volume |
| | Protected Right-of-way |



(Needs Factors + Benefits Factors)

Capital Expenditures

REVIEW HANDOUT

NEW INFORMATION

Economic Development Methodology and Components

Economic
Development
Component

```
graph TD; A[Economic Development Component] --> B[Construction Impacts]; A --> C[Existing Economic Characteristics]; A --> D[Future Impacts];
```

Construction
Impacts

Existing
Economic
Characteristics

Future Impacts

REVIEW HANDOUT

I. Construction Impacts

Construction
Impacts

```
graph TD; A[Construction Impacts] --> B[Total Project Employment]; A --> C[Total Project Employment divided by Project Region Employment]; A --> D[Estimated Number of Re-employed workers];
```

Total Project
Employment

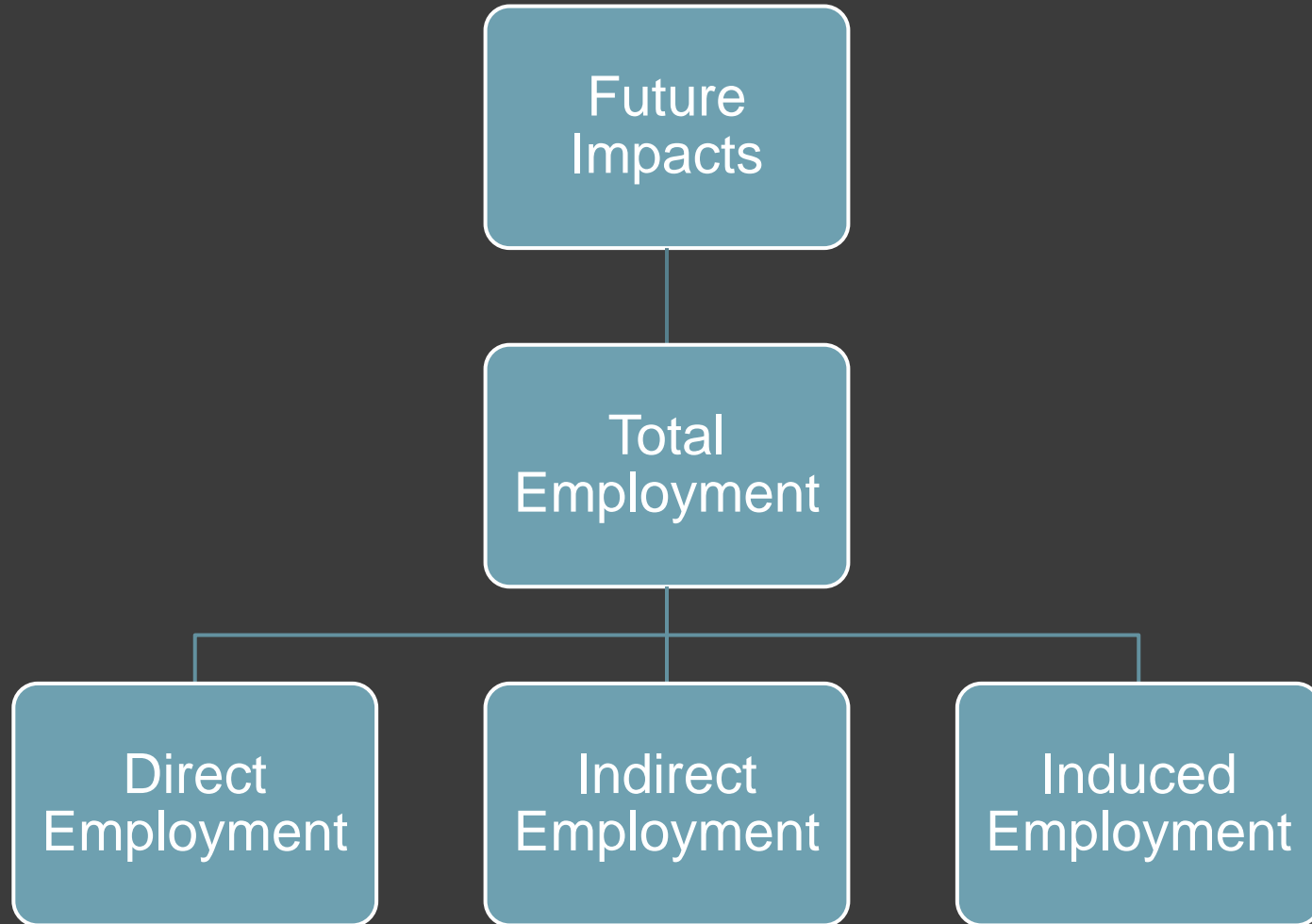
Total Project
Employment divided
by Project Region
Employment

Estimated Number
of Re-employed
workers

II. Existing Economic Conditions

| Variable | Why Should This Variable Be Measured? |
|---|---|
| Employment in Region | Will likely benefit either directly or indirectly from project |
| Employment in Distribution + Logistics + Manufacturing Employment | These industries are heavily dependent on the transportation network |
| Establishments in 1 mile Buffer of Road | Provides an indication of benefit to existing businesses near proposed roadways |
| Population in Region | Will likely benefit either directly or indirectly from project (differs slightly from employment in how benefit will be received) |
| Projected 10 Year Population Growth in Region | More uniform figure than employment projections |
| State and Local Tourism Tax Receipts in Region | Tourism is dependent on the transportation network, and tax receipts from tourism are largely inflow dollars to the state coffers |

III. Future Impacts



IV. IMPLAN

- ⦿ Industry Standard
 - State Governments
 - Federal Government
 - Universities
 - Private Sector
 - At least 4 state Department of Transportations

IV. IMPLAN: What's it Do?

- ⦿ Input – Output Model based on industry and geographic relationships (Multipliers)
- ⦿ Focusing on Employment
 - Direct
 - Indirect
 - Induced

Responses to Comments from Previous Webinar

| COMMENTS – <i>Economic Development</i> | RESPONSES |
|---|--|
| <ul style="list-style-type: none"> • The amount of weight given to the economic development criteria is excessive, given the unfamiliarity with the model that is proposed. • Where does the data come from to map the data to map the business locations. • The 1 mile buffer may incorporate areas that are unsuitable for development and does the model recognize land suitability | <ul style="list-style-type: none"> • The Department is considering lowering the weight of this factor and will discuss it at the Feb. 12 webinar. • The Department of Commerce receives location-specific data from a third party source, Dun & Bradstreet (D&B). D&B is a global firm that collects data on business location among other variables, and “D&B products and services are drawn from the world's largest database of its kind” (www.dnb.com). • No it does not. We have limited land-use modeling functionality at the Department of Commerce. <u>Existing Conditions Metric Response:</u> The 1-mile buffer around the proposed loop road, for the existing conditions component is measuring existing businesses, not potential for new businesses. Land suitability should not be a factor in this. <u>Future Impacts Response:</u> If this question is in reference to the future impacts and the buffer around proposed interchanges, we will not be doing land suitability tests. While it is true some areas are more suitable for development than others, it is also true many other factors are at play that will effect the economic impact of a particular interchange. It is not feasible for us to account for all factors. By looking at these factors through the broad scope of the model and not independently, we cannot say what effect each variable has, however, the aggregate effect will be measurable in the overall land-use model template. Please refer to Section III of the handout document regarding future impacts for more details on the proposed methodology used in creating the future interchange land-use model. |

| COMMENTS – <i>Economic Development</i> | RESPONSES |
|--|---|
| <ul style="list-style-type: none"> • Would prefer that a travel time based approach be used rather than a buffer. • The weight given to economic development may be too high | <ul style="list-style-type: none"> • Databases are not sufficiently detailed to determine travel times for every road within the buffer. One mile is simple to understand and easier to administer. In addition, the road network around the proposed loop is likely to change significantly with the creation of the loop. The Department of Commerce cannot adequately estimate the travel-time impact of the road, thus a buffer was used instead of travel time. • The Department is considering lowering the weight of this factor and will discuss it at the Feb. 12 webinar. |

| COMMENTS on Economic Development Criteria | RESPONSES |
|--|---|
| <ul style="list-style-type: none"> • Economic benefit could be eliminated all together. • The proposed weight given to economic development and ‘benefits’ factors in general seems to go contrary to the mission statement, which stresses safety and efficiency. | <ul style="list-style-type: none"> • Thank you for the comment. It is not likely to be eliminated since it is a key objective. • The Department is considering lowering the weight of this factor and will discuss it at the Feb. 12 webinar. However, the Urban Loop process is separate from the overall Strategic Prioritization Process and has different objectives and slightly different guiding principles. |

| COMMENTS on Economic Development Criteria | RESPONSES |
|--|---|
| <ul style="list-style-type: none"> Will the IMPLAN model results be compared, on a random selection basis, to a comparable model's results? (i.e. REMI) | <ul style="list-style-type: none"> REMI was considered but IMPLAN selected. Both models measure economic impact, but do it in different ways. REMI is a dynamic-scenario based model, it takes in the inputs, makes a host of assumptions and produces your output spread out over time. REMI is saying that if you do "x", "a", "b", "c" and "d" will result. And, these effects will cause "e" and "f", and so on. <p>IMPLAN is static – it takes in the input and measures the impact of that activity. It does this by using multipliers to estimate the impact. These multipliers are geographic and industry specific. IMPLAN is saying if you do "x", "a", "b" and "c" are the result.</p> <p>It is not feasible to measure the projects using IMPLAN and REMI. Aside from the time commitment this would take, IMPLAN data is available at the county-level. Commerce can combine counties and create regions that make the most sense depending on the project. For the loop projects, Commerce would combine counties into Labor Markets. There are slightly different definitions of Labor Markets, but the one we use was recommended by Dr. Michael Walden (North Carolina State University, Economics). The labor market areas (LMA) used in this analysis were derived by Dr. Charles Tolbert at Baylor University and are based on journey-to-work data provided in the latest decennial census (2000). Counties linked through cross-commuting are combined to form a region, or zone. Clusters of counties are formed into commuting zones based on maintaining an average rate of cross-commuting between zones of only 2 percent – that is, 98% of the economic activity are contained within a region. Commuting zones are formed into labor market areas by combining commuting zones with less than 100,000 in population. Commerce does not have REMI data to the county level, therefore we would be unable to analyze at the preferred geography. Rather, Commerce has REMI data to the economic development region, and this regional data is not appropriate for this project.</p> |
| | |

| COMMENTS on Economic Development Criteria | RESPONSES |
|---|---|
| <ul style="list-style-type: none"> What other States are using IMPLAN? Is there an overview presentation from IMPLAN that describes their modeling process? | <ul style="list-style-type: none"> See www.implan.com (under company and then client list) for a listing of other agencies using IMPLAN. Agencies in at least forty states use IMPLAN, as well as at least 25 federal government agencies, and hundreds of universities and private agencies. Additionally, the California, Maryland, Virginia, Washington and Wisconsin Departments of Transportation purchase IMPLAN software (as well as a host of other local and non-governmental transportation agencies/firms). You can find more details at www.implan.com. One article that maybe of particular interest is a story from Oregon on how IMPLAN was used in estimating the jobs created from constructing a bridge. http://implan.com/v3/index.php?option=com_content&view=article&id=274:kulongoski-to-paint-columbia-river-bridge-as-job-generator&catid=147:implan-in-the-news&Itemid=140 |

| COMMENTS on Economic Development Criteria | RESPONSES |
|--|--|
| <ul style="list-style-type: none"> • There is no need to discount employment impacts by dividing the impact by the total employment. • A 1-mile buffer is not adequate to assess impact on existing businesses. Travel times may be farther for businesses within one-mile that some businesses further than 1-mile. • If there is an multiplication of impacts by the local population or employment, this should NOT be done at the county level because some counties are geographically small but exist in a larger region. | <ul style="list-style-type: none"> • Model is investment driven. Unless we normalize the results, large projects will likely generate greater employment and thus be favored. • <u>Construction Impact Component</u> : Although we have not reached the point of assigning weights to certain variables within the Economic Development Metric, we do know total employment impact will have greater weight than re-employed workers or the total project employment impacts by divided by the total number of people employed in the region. • Understand but the databases are not sufficiently detailed to determine travel times on every route. One mile is simple to understand and easier to administer. Also, the road network around the proposed loop is likely to change significantly with the creation of the loop. The Department of Commerce cannot adequately estimate the travel-time impact of the road, thus a buffer was used instead. As far as choosing a 1-mile geography versus another option, the Department of Commerce and NCDOT have worked together to determine this is the most appropriate distance of measurement. • Using county data will result in a more consistent outcome as opposed to trying to define whether a county is small or large and whether an economic region is large or small. The discussions could go on and on over what is small or large. At this point, the Department of Commerce is not looking at any variable at the county level. We have the one-mile buffer geography used to measure businesses located within the buffer . For all other analysis the geography used will be the regional geography. |

| COMMENTS on Economic Development Criteria | RESPONSES |
|--|---|
| <ul style="list-style-type: none"> Only considering employment in manufacturing, distribution and logistics ignores many other industries. The measure of future economic characteristics does not recognize the positive impact of projects that provide connections between existing facilities, but do not include multiple interchanges. Points should be assigned proportionately and not comparatively. Due to the uncertainties associated with this economic development factor, the weight should be less than 20%. | <ul style="list-style-type: none"> Agree, and the Department of Commerce is looking at multiple variables in the existing conditions criteria. One of these variables is employment in manufacturing + distribution + logistics because these industries are heavily dependent on the road network. However, another variable is employment in the overall region. Please refer to the handout, Section III, which details the variables being considered in the existing conditions brief. True. This model is built on development around interchanges. To our knowledge, only the East End connector project in Durham is unique in this regard. The Department will work with the Durham MPO to determine how to best address this unique project. The East End connector has a high degree of regional support as evidenced by several groups supporting it and this economic development factor fails to adequately measure the connector's benefits. Additionally, it is important to remember that the future economic impacts are only one of three criteria used in the economic development metric. Construction and existing conditions are the other two. These three criteria will create a fairly complete picture of economic development. And, the economic development criteria is one of eight criteria NCDOT is considering in the loop prioritization process. Agree. A table or some measurement tool will be developed to assign points on a proportionate scale rather than a comparative scale. The Department is considering lowering the weight of this factor and will discuss it at the Feb. 12 webinar. |

ADDITIONAL QUESTIONS

ADDITIONAL SLIDES

IMPLAN EXAMPLE

- ⦿ Example Focuses on Construction Impacts Only
- ⦿ Focusing on Employment Impacts from Construction Activities
 - Direct Employment
 - Indirect Employment
 - Induced Employment

IMPLAN EXAMPLE

● INPUTS

| | |
|---|------------------------|
| Geography | Nash & Wilson Counties |
| Years to Complete | 1 |
| Investment in Year 1 | 100% |
| Construction Investment | \$200,000,000 |
| <i>*These figures do not represent any current or potential project; they are for illustrative purposes only.</i> | |

IMPLAN EXAMPLE

INPUTS

Current Model: NASHWILSONcounties

Tasks

Model

- New Model
- Open Model
- Close Model
- Model Overview

Analyze

- Setup Activities
- Analyze Scenarios
- Scenario Results

Explore

- Study Area Data
- Social Accounts

Manage Activities and Events

Activities

New Activity Edit Activity Delete Activity Activity Options

Preview

| Activity Name | Level | Activity Type |
|-------------------|-------|-----------------|
| Road Construction | 1.000 | Industry Change |

Events

New Event Copy Event Paste Event Delete Event Event Options

| Sector | Industry Sales | Employment | Employee Compensation | Proprietor Income | Event Year |
|--|------------------|------------|-----------------------|-------------------|------------|
| 36 Construction of other new nonresidential structures | \$200,000,000.00 | 1,466 | \$57,749,750.00 | \$7,123,595.00 | 2010 |

Number of Events in the Current Activity: 1

Sum of Event Values: 200,000,000.00

Next

Your IMPLAN Model is constructed through the Regional Multipliers and is complete.

IMPLAN EXAMPLE

SCENARIO RESULTS

MIG IMPLAN (IMpacts for PLANNing)

File Options Analyze Explore Customize Help

Current Model: NASHWILSONcounties

Tasks | **Scenario Results** | You are viewing the results for Road Construction Example in region NASHWILSONcounties

Model

- New Model
- Open Model
- Close Model
- Model Overview

Analyze

- Setup Activities
- Analyze Scenarios
- Scenario Results

Explore

- Study Area Data
- Social Accounts
- Industry Accounts
- Multipliers

Customize

- Study Area Data

Select the Scenario:

Road Construction Exam

Dollar Year for View: 2010

Direct Factor Change: \$0

Direct Institution Change: \$0

LPP Imports: \$0

Activities Included: Road Construction

Summary Results | Detail Results | Tax Impact

Total Impact Summary | Copy | Export

| | Impact Type | Employment | Labor Income | Value Added | Output |
|---|-----------------|------------|--------------|---------------|---------------|
| ▶ | Direct Effect | 1,465.8 | \$64,873,340 | \$68,753,320 | \$200,000,000 |
| | Indirect Effect | 366.0 | \$15,374,740 | \$22,440,920 | \$40,111,040 |
| | Induced Effect | 360.3 | \$11,623,390 | \$22,332,880 | \$36,869,420 |
| | Total Effect | 2,192.1 | \$91,871,460 | \$113,527,100 | \$276,980,500 |

Top Ten Industries Affected | Copy | Export | Top Ten By: Employment



| | Sector | Description | Employment | Labor Income | Value Added | Output |
|---|--------|--|------------|--------------|--------------|---------------|
| ▶ | 36 | Construction of other new nonresidential s... | 1,465.8 | \$64,873,340 | \$68,753,320 | \$200,000,000 |
| | 369 | Architectural, engineering, and related ser... | 70.2 | \$3,774,036 | \$3,828,609 | \$7,380,100 |
| | 413 | Food services and drinking places | 62.5 | \$1,007,499 | \$1,503,909 | \$3,120,200 |

Your IMPLAN Model is constructed through the Regional Multipliers and is complete.

IMPLAN EXAMPLE

SCENARIO RESULTS

| | Impact Type | Employment | Labor Income | Value Added | Output |
|---|-----------------|------------|--------------|---------------|---------------|
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| | | | | | |
|------------------------------------|--|--|--|--------------------------|--|
| Top Ten Industries Affected | |  Copy |  Export ▼ | Top Ten By: Employment ▼ | |
|------------------------------------|--|--|--|--------------------------|--|

| | Sector | Description | Employment | Labor Income | Value Added |
|---|--------|--|------------|--------------|--------------|
| ► | 36 | Construction of other new nonresidential s... | 1,465.8 | \$64,873,340 | \$68,753,320 |
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| | 413 | Food services and drinking places | 62.5 | \$1,007,499 | \$1,503,905 |

IMPLAN EXAMPLE

◎ RESULTS INTERPRETATION

| Nash + Wilson County IMPACTS | RESULTS |
|--|---------|
| Total Project Employment (Direct, Indirect & Induced) | 2,191 |
| Total Project Employment Divided By Project Region Employment (76,557) | 0.0286 |
| Estimated Number of Re-employed Workers (Region 12-Month Unemployment Rate 12.6%) | 276 |

Other State Example

Businesses

Total number of businesses for communities in corridor

Percent of businesses in high output growth forecast sectors

Percent of businesses in manufacturing sectors

Employment

Total employment for communities in corridor

Percent of employees employed in "healthy" sectors, with high output growth forecasts

Percent of employees employed in manufacturing sectors

Population

2000 population in corridor

2000-2015 projected population growth

Tourism

Lodging rooms available in corridor

1999 tourism related expenditures in county(ies)

1999 percent employed in tourism-related industries in county(ies)

Major Project Candidates to be Analyzed for Potential Enumeration (Wisconsin DOT, 2002)

Draft Scoring System

⦿ Needs Factors

- Congestion needs 10%
- Safety needs 5%

⦿ Benefits Factors

- Travel time savings 30%
- Economic Development 20%
- Freight Volume 5%
- Multi-modal 5%
- Protected Right-of-way 5%
- Non-Loop Funding 20%

⦿ Cost